REMARKS

Reconsideration of this application and the allowance of rejected claims 1, 2, 5-7 and 32 are respectfully requested. Applicants have attempted to address all grounds for rejection in the Office Action dated August 5, 2010 (Paper No. 20100708) and believe that the application is now in condition for allowance. The claims have been amended to more clearly describe the present invention.

Claim 32 is rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. Specifically, the Examiner states that based on the specification, high inductance occurs at frequencies of 700-2000 Hz, whereas claim 32 includes frequencies below 700 Hz. Applicants have amended claim 32 to correspond to the frequencies stated in the specification. Accordingly, Applicants respectfully request that the rejection of claim 32 be withdrawn.

Claims 1, 5 and 32 are rejected as being unpatentable over the combination of U.S. Patent No. 6,066,598 to Ishikawa et al., U.S. Publication No. 2003/0144150 to Arendt, U.S. Patent No. 6,239,674 to Enokihara and U.S. Patent No. 5,834,405 to Ahn. Applicants disagree with and traverse this rejection for the following reasons.

Ishikawa discloses a superconducting multilayer electrode including alternating superconductor layers and dielectric layers laminated with each other on one side of a dielectric substrate. The superconductor layer is formed on the substrate and then dielectric layers and superconductor layers are alternately laminated thereon. Arendt is cited as teaching the step of depositing one or more buffer layers (i.e., insulating layers) onto a

substrate. Enokihara is cited as teaching input/output terminals having transmission lines coupled to a conductor where the conductor can be a superconductor. Ahn discloses a superconducting multilayer ceramic substrate that is prepared by connecting at least one metallic conductor embedded in a ceramic dielectric oxide before establishing a superconducting oxide reaction layer at intervals between the ceramic material and at least one metallic conductor.

A person of ordinary skill in the art would not combine Ishikawa et al., Arendt, Enokihara and Ahn to achieve the claimed invention where there is no reason or motivation to make such a combination.

In the Action, Arendt is combined with the above cited references because the Examiner states that Arendt "teaches one or more suitable buffer layer (sic) . . . [that] can be deposited onto a substrate . . . ." Arendt, however, teaches away from such a construction. Specifically, Arendt states in paragraph [0004] that "a YSZ buffer layer has been deposited . . . directly on a desired substrate . . . " and that "[w]hile the performance was satisfactory, the deposition of the YSZ layer [i.e., the buffer layer directly on the substrate] . . . was considered too slow for commercial production." Thus, Arendt teaches away from depositing a buffer layer directly on a substrate as it would slow down production.

Furthermore, none of the cited references disclose or suggest a superconducting component having a stack of layers that exhibit a high inductance even in the restricted frequency ranges of microwave resonators. As stated previously, Ishikawa is directed to a superconducting multilayer electrode for use in high-frequency bands including microwaves,

decimillimetric waves, or millimetric wave, for use in devices such as high-frequency transmission lines, resonators and filters (Col. 1, lines 7-12). As such, Ishikawa fails to disclose or suggest any high inductance feature.

The superconducting substrate of Ahn operates at frequencies that are consistent with computer boards, i.e., approximately 400 MHz, and does not disclose or suggest any high inductance feature. Similarly, Enokihara discloses a high-frequency circuit element or transmission line, and does not disclose any high inductance feature. Arendt fails to remedy the deficiencies of these references. Thus, the components disclosed by the cited combination are therefore meant to operate at frequencies that are significantly greater than the frequencies of most of the components of the claimed invention.

Also, lower inductance is normal where the component lacks a direct connection with direct current running through it. The cited art fails to teach that a direct connection between a buffer layer and a substrate would lead to a high inductance at the disclosed frequency ranges or at any frequency ranges.

For these reasons, Applicants submit that a person of ordinary skill in the art would not combine Ishikawa, Arendt, Enokihara and Ahn to achieve the claimed invention where there is no motivation or suggestion in the references to make such a combination.

Nevertheless, even if the references are combined, the cited combination fails to disclose or suggest the subject matter of the amended claims.

In contrast, amended claim 1 recites, among other things, a method for producing a superconducting inductive component that includes the steps of "depositing an

insulating film directly on a substrate, depositing a superconducting film on the insulating film, and depositing a stack of alternately superconducting and insulating films comprising at least one line segment incorporating at least one terminal of the component on said insulating film, said line segment including one of a conducting layer and a superconducting layer." The combination of Ishikawa, Arendt, Enokihara and Ahn fails to disclose or suggest such subject matter.

Ishikawa discloses a superconducting multilayer or electrode including alternating superconductor layers and thin-film dielectric layers (i.e., insulating layers). As shown in Fig. 1, the bottommost layer of the stack is a superconducting layer 5 that is directly deposited on the substrate 10. In fact, Ishikawa specifically states that "a superconducting multilayer electrode is formed on the top surface of a dielectric substrate 10 having a ground conductor 11 formed on the bottom surface thereof so as to come into contact with a thin-film superconductor 5 which is the bottommost layer" (Col. 3, lines 59-63). Ishikawa therefore specifically states that the superconducting layer is placed directly on the substrate so as to be in direct contact with the substrate. Ishikawa therefore fails to disclose or suggest a component including a superconducting layer that is deposited on an insulating film, which is deposited directly on a substrate followed by a stack of alternatively superconducting insulating films that are deposited on the superconducting layer as recited in amended claim 1.

Enokihara fails to remedy the deficiencies of the cited references. Enokihara discloses an elliptical resonator that does not include the stack of layers recited in amended claim 1.

Furthermore, Ahn does not remedy the deficiencies of the cited combination. In particular, Ahn discloses a superconducting multilayer ceramic substrate and a method for producing that substrate. Ahn does not disclose or suggest depositing an insulting film directly on that substrate then depositing a superconducting layer on the insulating film followed by depositing a stack of alternatively superconducting and insulating films on the superconducting layer.

Accordingly, Applicants submit that amended claim 1, and the claims that depend therefrom, are each patentably distinguished over the combination of Ishikawa and Ahn and in condition for allowance.

Claim 2 is rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Ishikawa, Arendt, Enokihara, Ahn and "IEEE Transactions on Magnetics," 27:1365-1368 (1991) to Lee et al. Applicants disagree with and traverse this rejection for the following reasons.

Claim 2 depends from amended claim 1. As stated above, the combination of Ishikawa, Arendt, Enokihara, and Ahn fails to disclose or suggest the subject matter of amended claim 1. Lee fails to remedy the deficiencies of Ishikawa and Ahn. Therefore, Applicants submit that claim 2 is patentably distinguished over the combination of Ishikawa, Ahn and Lee for at least the reasons provided above and for the further reasons that the cited

combination fails to disclose or suggest the subject matter of claim 2 in combination with the subject matter of amended claim 1.

Claims 6 and 7 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Ishikawa, Arendt, Enokihara, Ahn and U.S. Patent No. 5,219,827 to Higaki. Applicants disagree with and traverse this rejection for the following reasons.

Claim 6 depends from amended claim 1. Claim 7 depends from claim 5 which depends from amended claim 1. As stated above, the combination of Ishikawa, Arendt, Enokihara and Ahn fails to disclose or suggest the subject matter of amended claim 1. Higaki fails to remedy the deficiencies of Ishikawa, Arendt, Enokihara and Ahn. Therefore, Applicants submit that claims 6 and 7 are each patentably distinguished over the cited combination for the reasons provided above and for the further reason that the cited combination fails to disclose or suggest the subject matter of claims 6 and 7 in combination with the subject matter of amended claim 1.

In view of the above remarks, the application is respectfully submitted to be in allowable form. Allowance of the rejected claims is respectfully requested. Should the Examiner discover there are remaining issues which may be resolved by a telephone interview, he is invited to contact Applicants' undersigned attorney at the telephone number listed below.

Respectfully submitted,

GREER, BURNS & CRAIN, LTD.

By /Christopher S. Hermanson/
Christopher S. Hermanson
Registration No. 48,244

January 4, 2011
300 South Wacker Drive
Suite 2500
Chicago, Illinois 60606
Telephone: 312.360.0080
Facsimile: 312.360.9315
Customer No. 24978